

**2018 SCE&G IRP Comments – Docket No. 2018-9-E**

South Carolina Solar Business Alliance

The South Carolina Solar Business Alliance (“SCSBA”) respectfully submits the following comments to the Public Service Commission of South Carolina (“Commission”) on the 2018 Integrated Resource Plan (“IRP”) of South Carolina Electric & Gas Company (“SCE&G” or “the Company”), in Docket No. 2018-9-E.

As required by the S.C. Code Ann. § 48-52-210, South Carolina developed its first State Energy Plan in 2016. Former Executive Director of the South Carolina Office of Regulatory Staff, Dukes Scott, wrote in his introductory remarks that, “The State Energy Plan is a marvel of collaboration. It represents steady, earnest work by more than 130 professionals representing over sixty organizations for close to two years.”<sup>1</sup>

The first recommendation in the 2016 South Carolina State Energy Plan focuses on integrated resource planning:

Ensure that electric utility Integrated Resource Plans (IRPs) clearly demonstrate and reflect access to energy supplies at the lowest practical environmental and economic cost and that demand-side options are pursued wherever economically and environmentally practical.<sup>2</sup>

Included in this recommendation is also an assertion that resource plans *should* include a minimum set of alternative resource portfolios and scenarios for analysis. Unfortunately, SCE&G’s 2018 Integrated Resource Plan (IRP) falls well short of these standards.

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<sup>1</sup> <http://www.energy.sc.gov/files/Energy%20Plan%2003.02.2018.pdf>, at p. 5

<sup>2</sup> Id. at p. 18

In a time when SCE&G's customers are experiencing historically high electricity rates, it is incumbent upon this Commission to hold the Company to high standards of utility resource planning.

As explained in more detail below, the Company has multiple opportunities to reduce the costs and risks borne by its customers which it has failed to investigate or pursue. Because it has failed to properly consider reasonable portfolio alternatives that could better insulate its customers from investment risk and rising electricity rates, the company's proposed 2018 IRP should be rejected by this Commission.

**I. The Company has Failed to Consider a Reasonable Range of Options to Meet its Resource Needs.**

The South Carolina State Energy Office recommends that in developing its IRPs, "Each utility should analyze multiple resource portfolios that consider a range of supply-side and demand-side resources including DSM and renewable energy (RE) resource options." South Carolina State Energy Office, Draft IRP Guidelines ("IRP Guidelines"), at 3.<sup>3</sup> The failure of the V.C. Summer nuclear project in Summer 2017, created a capacity gap of approximately 1,340 MW as well as a corresponding gap in its portfolio of energy resources. The Company has a wide range of options for replacing this energy and capacity in an efficient and cost-effective way, yet the Company largely limited its consideration to a handful of options, all of which centered on the construction or acquisition additional Company-owned generating plants. The option selected by the Company, and included in the 2018 IRP adds two natural gas-fired combined-cycle plants – further expanding the Company's exposure to the risks associated with fossil-fuels.

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<sup>3</sup>Available online at, <http://www.energy.sc.gov/files/view/IRP%20Guidelines-Consensus.pdf>.

The first additional plant is a 504 MW combined-cycle plant at the Columbia Energy Center, which the Company is proposing to acquire at a cost of \$180 million. The second addition is a generic 540 MW combined-cycle gas turbine (CCGT) which it proposed to construct, with a projected completion date of 2023. The Company provides no justification for this investment other than the fact that it projects a shortfall in capacity in the winter, based upon its newly adopted 21% winter target reserve margin. This facility is mentioned in only one sentence and one table in the entire IRP. No mention is made in the IRP of the risks associated with further expanding its exposure to volatile natural gas prices – despite the fact that avoiding these risks was one of the principal goals of the V.C. Summer nuclear construction project.

Net-metered rooftop solar (NEM), demand side management (DSM), and solar QF's providing power through PURPA contracts make up the balance of the resource plan. PURPA QF's are forecasted to provide 243 MW of firm power through 2020 with no incremental QF growth thereafter. The IRP does not include any recognition of the other QF projects currently in the Company's interconnection queue, and it includes little or no analysis or mention of other viable options, including energy storage, QF solar + storage, firm power purchases, and off-shore wind. No capital cost data is provided for any of the resources considered in the procurement plan, or of the other alternatives.

It is clear from the IRP itself and from statements by Company officials that the Company did not consider a broad range of options to meet its capacity needs in formulating its resource plan. In the recent fuel proceeding (Docket No. 2018-2-E), SCE&G's manager of resource planning, Dr. Joseph Lynch, testified that in formulating the IRP the Company only considered combined cycle and combustion turbine natural gas plants to meet future capacity needs. Ex. 1, Excerpts of Transcript from Apr. 10-11, 2018 hearing, Docket No. 2018-2-E

(“Fuel Hearing Tr.”), at E-209:2-10; E-214:4-11. Dr. Lynch also testified that the Company did not use optimization software when creating its IRP. *Id.* Even with respect to the CCGT units, based on the Company’s work papers, the only parameters examined by the company were whether to add a combined cycle or simple cycle combustion turbine, and when the units would go on line. And although the Company included some firm power purchases in the IRP, there is no indication the Company actually studied the economics of firm power purchases in comparison to adding more generating units to its portfolio – it appears that the Company simply used such purchases as a “filler” as necessary in order to meet the target reserve margin until new generating units were added. It is particularly noteworthy that the Company did *not* evaluate the reduced risks and increased flexibility afforded by power purchases when compared to the high risks and minimal flexibility associated with Company owned generating plants which are likely to remain in the Company’s based, burdening customers, for 30 or more years even if they do not prove to be cost-effective.

What the Company also did *not* do was consider the full range of supply-side and demand-side resources to determine the optimal mix of resources – a portfolio that would meet the company’s capacity and energy needs in the most economical, environmental, and/or reliable way. Supply side options that were not adequately studied included purchasing firm capacity and/or energy from a natural gas-fired merchant generating plants on either a short-term or long-term basis, purchasing firm capacity and energy at a long-term fixed prices from a hydro plant, or purchasing capacity and energy at a long-term fixed prices from solar QFs, or solar + storage QFs. Demand side options were also not adequately studied, including various types of energy efficiency efforts, and various forms of demand side management.

Dr. Lynch noted at one point in his Testimony in the fuel case that there is no reason to consider additional solar in its IRP, because solar is developed by QFs and the Company, “has to take whatever solar shows up.” *Id.* at E-212:17-20. While the latter statement is true (under Federal Law, the Company is obligated to purchase from QFs at its avoided costs), this ignores the fact that the IRP provides an ideal opportunity to evaluate and understand the impact of QF power on the remaining elements of the optimal resource mix. Given the large number of QF projects already in its interconnection queue, the Company should have evaluated its other demand-side and supply-side options with a view toward how well they will mesh with increased amounts of QF power.

Similarly, while SCE&G acknowledges the significant role battery storage is likely to play in the future, it has not begun to seriously consider the impact that battery storage will have on its system, or the implications this has for other aspects of its resource portfolio. *See* IRP at 39 (battery storage systems “are likely to play a significant role in the future, both on the grid and in the home”).

Nor does the Company consider, in the IRP, the operational adjustments that would increase the capacity value of solar resources that is currently online, under contract or in its interconnection queue. Such measures could include operational changes to the Fairfield pumped storage facility, which the Company has acknowledged could help to cope with some of the challenges that the Company claims are posed by the intermittency of solar resources. Finally, the Company does not consider in the IRP whether the continued operation of older fossil-fueled generating resources past their planned operational life is economically efficient, or whether it would be better for customers if it were to plan on retiring some of those units and procuring energy and capacity from other sources.

It is very clear that the Company has not made efforts to ensure that the chosen resource plan is economically efficient or otherwise beneficial to its retail customers. In the fuel case, the Company's representative acknowledged that there is nothing in the 2018 IRP to demonstrate this plan represents a least cost option for ratepayers. Fuel Hearing Tr. at E-203, 6-25; E-204, 1-3. The IRP itself claims only that "The resource plan thus constructed represents one possible way to reliably meet the increasing demand of our customers." 2018 IRP at 41. In fact, it appears from the Excel files the Company used to evaluate its options that the estimated cost of the expansion plan adopted in the 2018 IRP (expansion plan CC2023, which adds the combined cycle unit in 2023), is actually \$11 million higher than the cost of expansion plan CC2028, which relies on firm power purchases for 5 additional years, before finally adding the combined cycle plant in 2028.

In other words, the Company's own work papers show that the CC2023 expansion plan selected for the IRP is not optimal, even within the narrow context of the limited set of timing options that were evaluated. SCE&G did not select the expansion plan with the lowest revenue requirement, or the lowest cost of consumers. If implemented, this expansion plan would require customers to bear both higher costs and greater risks than an expansion plan that relies more on firm power purchases, with corresponding reductions or delays in SCE&G's investment in additional fossil fuel generating units, and greater flexibility to accommodate increased amounts of QF power.

**II. The IRP Indicates that the Company is Over-Reliant on Natural Gas Fuel Sources.**

The IRP also demonstrates that the Company relies too heavily on natural gas to meet its future capacity and energy needs, and there has been no showing that it has adequately contemplated or evaluated the adverse impact of fluctuating natural gas prices on its customers. The State Energy Office recommends that in formulating an IRP, each utility should “expand its evaluation to establish a set of scenarios and/or sensitivities to analyze the robustness of each resource portfolio.” IRP Guidelines at 3. This should include exploration of uncertainties in fuel prices and load growth. And in recent years, the company and this Commission have found it reasonable to consider the risk of increased natural gas prices on SCE&G’s generation plans. Former Chairman and CEO of SCANA Corporation and SCE&G, Kevin Marsh, testified to this Commission in 2015 that it would be “dangerous from both a cost and reliability standpoint” for the Company to over-rely on a single fuel source, including in particular natural gas. Ex. 2, Direct Testimony of Kevin Marsh on Behalf of South Carolina Electric & Gas Co., Docket No. 2015-103-E, (corrected version), (excerpts) at 24:9-12.

Mr. Marsh testified to the Company’s view that the current trend of low natural gas prices is unlikely to continue over the long term. “[P]redictions of future natural gas prices are notoriously unreliable over the long-term,” and “there is every reason to expect that in the coming years U.S. natural gas prices may begin to respond to global markets and the global hunger for energy.” *Id.* at 20:21-22, 22:6-7. For this reason, “prudent utility generation plans seek to create balanced systems that can respond as prices fluctuate over time and are not overly dependent on any one fuel source.” *Id.* at 21:4-6.

Notwithstanding the recommendations of the Energy Office and the Company's own track record of advocating reduced reliance on fossil fuels, in the 2018 IRP the Company makes no effort to increase the diversity of its fuel supplies, but instead doubles down on natural gas-fired generation. Yet, it is well understood that gas prices have historically been highly volatile, and there is no assurance that gas prices will remain as low as they are currently. To give some indication of the magnitude of this risk for SCE&G's customers, consider the U.S. Energy Information Administration's latest upper price scenario for U.S. gas delivered to the power sector. EIA forecasts prices rising from \$3.78/TCF in 2017 to \$8.28/TCF by 2027, in constant dollars – an increase of 119% (EIA Annual Energy Outlook 2017).<sup>4</sup> The only new capacity resources considered by the Company in the IRP are new natural gas-fired plants (or the purchase of power from gas-fired merchant plants while waiting for those plants to be added). This over-reliance on Company-owned generating units, and excessive reliance on natural gas as a fuel source increases risks for customers and reduces the Company's ability to nimbly respond to changes in the market – including the impact of new technologies like battery storage, which is expected to become increasingly cost effective in the near future.

### **III. Implications of the IRP.**

As recently affirmed by this Commission, the Company's IRP strongly influences its calculation of avoided cost. Docket No. 2018-2-E, Order No. 2018-322 (Apr. 30, 2018) at 16. Changes to the assumptions in the IRP result in changes to avoided costs, and therefore rates paid to Qualifying Facilities and net metering customers. Fuel Hearing Tr. at E-203:3-5.

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<sup>4</sup> [https://www.eia.gov/outlooks/aeo/excel/sidecases/lrestech/aeotab\\_13.xlsx](https://www.eia.gov/outlooks/aeo/excel/sidecases/lrestech/aeotab_13.xlsx)



Consequently, the Company's failure to optimize its IRP has a ripple effect on other issues before this Commission, like those encountered during the Company's recent fuel docket. Artificially low avoided cost rates shield the Company from competition from independent power producers and they discourage the introduction of cost effective demand-side alternatives. An IRP that has not been optimized for customer benefits will inevitably lead to inaccurate avoided costs, which will further exacerbate the problem with failing to adequately evaluate all of the available resource options.

Because demand-side resources like energy efficiency and demand response often require longer planning horizons to deploy than supply-side resources like natural gas and solar, a failure to properly consider the role these resources could play in meeting future needs will tend to eliminate them as options, or prevent them from being given a fair chance to compete with supply-side options. When addressing the Company's winter peaking needs, a failure to utilize least cost demand-side options means premature long-term commitments to additional generating units, which will impose higher costs on customers and undermine the economics of QF solar generation.

#### **IV. Recommendations.**

In light of the above observations, SCSBA recommends that the Commission not approve the IRP as submitted, but instead require the Company to undertake the following analyses and submit a revised resource plan taking the results into account:

1. Conduct alternative resource analyses using optimization software, which include all economical demand-side and supply-side options, including but not limited to:

- a. Increased reliance on demand side management programs to manage winter peaks;
- b. Additional firm power purchases that are targeted at winter mornings;
- c. Operational changes to the existing storage resources on SCE&G's system;
- d. Increased purchases of generation from solar Qualifying Facilities;
- e. Consideration of alternative retirement schedules for existing resources; and
- f. Incorporation of QF solar + storage facilities;

2. Conduct alternative sensitivity analyses to evaluate the impact of changes in fuel costs, battery storage, and federal regulations on carbon on various portfolio options available to the company.

3. Determine revenue requirements under alternative resource and sensitivity analyses.

4. Conduct economic analyses of planned unit retirements and other options.

SCSBA further recommends that the Commission take the following additional actions:

Instruct ORS to retain a third-party to evaluate the company's reserve margin needs using industry best practices.

SCSBA further recommends that the Commission take two additional actions:

1. Instruct ORS to retain a third-party to evaluate the Company's reserve margin using industry best practices.

2. Encourage the Company, ORS and other interested parties to work together on a collaborative basis, to evaluate alternatives to the Company's proposed resource mix and their potential impact on the Company's avoided energy and capacity costs, to better protect the interests of customers, and to encourage the development of more accurate avoided cost estimates to be used in setting QF rates.

The South Carolina General Assembly has granted deference to the South Carolina Public Service Commission in its evaluation of utility integrated resources plans. Section 58-37-10 of the South Carolina Code of Laws states that, "For electrical utilities subject to the jurisdiction of the South Carolina Public Service Commission, this definition must be interpreted in a manner consistent with the integrated resource planning process adopted by the commission."

We request that the Commission embrace its responsibility and authority to review and approve SCE&G's integrated resource plan and require SCE&G to engage in an integrated resource planning process that demonstrates it will meet future capacity needs in an economical, reliable, and environmentally-sound way.

Respectfully submitted, this 2<sup>nd</sup> day of May 2018.